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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/688,558 | 10/16/2000 | Peter J. Anslow | 537-1026 | 3391 |
| 7590 | 01/26/2005 | | EXAMINER | |
| William M. Lee, Jr. Lee, Mann, Smith, McWilliams, Sweeney & Ohlson P. O. Box 2786 Chicago, IL 60690-2786 | | | PHAN, HANH | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2633 | |

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

TB

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application N . | Applicant(s) | |
| | 09/688,558 | ANSLOW ET AL. | |
| | Examiner Hanh Phan | Art Unit 2633 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 16 October 2000.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-16 and 18 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 08/23/2004.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claim 18 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 09/804,330 (Heath et al.). Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations recited in claim 18 of the instant application are encompassed by claims 1-18 of the copending Application No. 09/804,330 (Heath et al.).

Regarding claim 18, Heath discloses a WDM optical communications network comprising a plurality of nodes and a plurality of amplifiers between the nodes, each node comprising an optical switching arrangement for performing routing of signals

across the network, wherein each node is provided with an apparatus for determining the Q-factor of individual channels of the WDM optical signal, and wherein each optical amplifier is provided with optical spectrum analysis apparatus (see claims 1-10 of the copending Application No. 09/804,330).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-3, 9-13 and 14-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

-Claim 1 recites the limitation "**the decision threshold level**" in line 9. There is insufficient antecedent basis for this limitation in the claim.

-Claim 9 recites the limitation "**the decision threshold level**" in line 12. There is insufficient antecedent basis for this limitation in the claim.

-Claim 14 recites the limitation "**the decision threshold level**" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3-5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ransford et al (US Patent No. 6,532,087) in view of Myers et al (US Patent No. 6,430,715).

Regarding claims 1 and 4, referring to figure 4, Ransford discloses an apparatus for determining an error ratio of individual channels of a WDM optical signal, comprising:
a wavelength-selective filter (i.e., tunable band pass filter 410, Fig. 4) for separating the individual channels of the WDM signal (col. 10, lines 13-18);
a measurement circuit (i.e., Q detection circuit 100, Fig. 4) for measuring an error ratio of one channel using a decision threshold level, the measurement circuit (Q detection circuit 100, Fig. 4) being operable to cycle through all channels, taking an error ratio measurement for each channel in sequence. The Q- detection circuit 100 receives the filtered individual signal and determines the Q-factor for that signal, and the Q-detection circuit 100 will sequentially test for the Q-factor of each individual signal being transmitted across the WDM system, and will then repeat the process (see col. 10, lines 28-53 and col. 11, lines 8-23).

Ransford differs from claims 1 and 4 in that he fails to teach taking an error ratio measurement for each channel in sequence with a predetermined decision threshold level and control circuitry for altering the decision threshold level for successive cycles of the measurement circuit and wherein measured error ratios for each channel using different decision thresholds are combined to determine a channel error ratio. However, Myers in US Patent No. 6,430,715 teaches taking an error ratio measurement for each channel in sequence with a predetermined decision threshold level and control circuitry for altering the decision threshold level for successive cycles of the measurement circuit and wherein measured error ratios for each channel using different decision thresholds are combined to determine a channel error ratio (Figs. 3-5, col. 2, lines 8-11 and lines 49-52, col. 3, lines 55-67 and col. 4, lines 1-67 and col. 5, lines 1-16). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the taking an error ratio measurement for each channel in sequence with a predetermined decision threshold level and control circuitry for altering the decision threshold level for successive cycles of the measurement circuit and wherein measured error ratios for each channel using different decision thresholds are combined to determine a channel error ratio as taught by Myers in the system of Ransford. One of ordinary skill in the art would have been motivated to do this since Myers suggests in column 2, lines 8-11 and lines 49-52, col. 3, lines 55-67 and col. 4, lines 1-67 and col. 5, lines 1-16 that using such the taking an error ratio measurement for each channel in sequence with a predetermined decision threshold level and control circuitry for altering the decision threshold level for successive cycles of the

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measurement circuit and wherein measured error ratios for each channel using different decision thresholds are combined to determine a channel error ratio have advantage of allowing determining an error ratio of each channel and the Q value accurately and providing an evaluation of received signal quality.

Regarding claims 3 and 5, the combination of Ransford and Myers teaches the measurement circuit measures an error ratio by monitoring the channel with the applied decision threshold level for a predetermined time period, which time period is constant for all channels and for all decision threshold levels (Figs. 2 and 4 of Ransford and Figs. 3-5 of Myers).

Regarding claim 7, the combination of Ransford and Myers teaches the error ratio is obtained by comparing the measured signal using the applied decision threshold with the measured signal using a default decision threshold (Figs. 3-5 of Myers).

Regarding claim 8, the combination of Ransford and Myers teaches the error ratio is obtained by using a data structure embedded in the channel data (col. 6 of Ransford, lines 45-67 and col. 7, lines 1-15 and Figs. 3-5 of Myers).

8. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ransford et al (US Patent No. 6,532,087) in view of Myers et al (US Patent No. 6,430,715) and further in view of Takeshita et al (US Patent No. 6,538,779).

Regarding claims 2 and 6, Ransford as modified by Myers teaches all the limitations of the claimed invention as set forth under the rejection in claims 1 and 4 above except fails to teach an error warning indicator which provides an error warning

when a measured error ratio exceeds the expected error ratio for the particular decision threshold being applied by a predetermined amount. However, Takeshita in US Patent No. 6,538,779 teaches an error warning indicator which provides an error warning when a measured error ratio exceeds the expected error ratio for the particular decision threshold being applied by a predetermined amount (Figs. 2 and 3, col. 2, lines 35-44, col. 4, lines 30-67 and col. 5, lines 1-32). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the error warning indicator which provides an error warning when a measured error ratio exceeds the expected error ratio for the particular decision threshold being applied by a predetermined amount as taught by Takeshita in the system of Ransford modified by Myers. One of ordinary skill in the art would have been motivated to do this since Takeshita suggests in column 2, lines 35-44, col. 4, lines 30-67 and col. 5, lines 1-32 that using such the error warning indicator which provides an error warning when a measured error ratio exceeds the expected error ratio for the particular decision threshold being applied by a predetermined amount have advantage of allowing monitoring the quality of the light signal and evaluation of received signal quality.

9. Claims 9, 11, 12, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ransford et al (US Patent No. 6,532,087) in view of Myers et al (US Patent No. 6,430,715) and further in view of Al-Salameh et al (US Patent No. 6,766,113).

Regarding claims 9 and 14, Ransford as modified by Myers teaches all the limitations of the claimed invention except fails to teach each node comprising an optical switching arrangement for performing routing of signals across the network. However, Al-Salameh in US Patent No. 6,766,113 teaches each node comprising an optical switching arrangement for performing routing of signals across the network (Figs. 1 and 2, and see from col. 2, line 17 through col. 4, line 50). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the each node comprising an optical switching arrangement for performing routing of signals across the network as taught by Al-Salameh in the system of Ransford modified by Myers. One of ordinary skill in the art would have been motivated to do this since Al-Salameh suggests from col. 2, line 17 through col. 4, line 50 that using such the each node comprising an optical switching arrangement for performing routing of signals across the network has advantage of allowing distributing the signals from the central office to the user terminals.

Regarding claims 11 and 15, the combination of Ransford, Myers and Al-Salameh teaches the measurement circuit measures an error ratio by monitoring the channel with the applied decision threshold level for a predetermined time period, which time period is constant for all channels and for all decision threshold levels (col. 10 of Ransford, lines 4-59).

Regarding claim 12, the combination of Ransford, Myers and Al-Salameh teaches wherein each node is further provided with an apparatus for determining an error ratio (Fig. 4 of Ransford and Figs. 3-5 of Myers).

10. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ransford et al (US Patent No. 6,532,087) and Myers et al (US Patent No. 6,430,715) in view of Al-Salameh et al (US Patent No. 6,766,113) and further in view of Takeshita et al (US Patent No. 6,538,779).

Regarding claims 10 and 16, Ransford as modified by Myers and Al-Salameh teaches all the limitations of the claimed invention as set forth under the rejection in claims 9 and 14 above except fails to teach an error warning indicator which provides an error warning when a measured error ratio exceeds the expected error ratio for the particular decision threshold being applied by a predetermined amount. However, Takeshita in US Patent No. 6,538,779 teaches an error warning indicator which provides an error warning when a measured error ratio exceeds the expected error ratio for the particular decision threshold being applied by a predetermined amount (Figs. 2 and 3, col. 2, lines 35-44, col. 4, lines 30-67 and col. 5, lines 1-32). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the error warning indicator which provides an error warning when a measured error ratio exceeds the expected error ratio for the particular decision threshold being applied by a predetermined amount as taught by Takeshita in the system of Ransford modified by Myers and Al-Salameh. One of ordinary skill in the art would have been motivated to do this since Takeshita suggests in column 2, lines 35-44, col. 4, lines 30-67 and col. 5, lines 1-32 that using such the error warning indicator which provides an error warning when a measured error ratio exceeds the expected

error ratio for the particular decision threshold being applied by a predetermined amount have advantage of allowing monitoring the quality of the light signal and evaluation of received signal quality.

11. Claims 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ransford et al (US Patent No. 6,532,087) and Myers et al (US Patent No. 6,430,715) in view of of Al-Salameh et al (US Patent No. 6,766,113) and further in view of Vanoli et al (US Patent No. 5,943,147).

Regarding claims 13 and 18, Ransford as modified by Myers and Al-Salameh teaches a WDM optical communications network comprising a plurality of nodes and a plurality of amplifiers between the nodes, each node comprising an optical switching arrangement for performing routing of signals across the network (Figs. 1 and 2 of Al-Salameh), wherein each node is provided with an apparatus for determining the Q-factor of individual channels of the WDM optical signal (Fig. 4 of Ransford and Figs. 3-5 of Myers).

The combination of Ransford, Myers and Al-Salameh fails to teach each optical amplifier provided with an optical spectrum analyzer. However, Vanoli in US Patent No. 5,943,147 teaches each optical amplifier provided with an optical spectrum analyzer (Figs. 1, 11 and 12, col. 19, lines 25-67, col. 20, lines 1-21). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the each optical amplifier provided with an optical spectrum analyzer as taught by Vanoli in the system of Ransford modified by Myers and Al-Salameh. One of

ordinary skill in the art would have been motivated to do this since Vanoli suggests in column 19, lines 25-67, col. 20, lines 1-21 that using such the each optical amplifier provided with an optical spectrum analyzer has advantage of allowing measuring the signal to noise ratio of the signal and monitoring the quality of the signal and evaluation of received signal quality.

Response to Arguments

12. Applicant's arguments with respect to claims 1-16 and 18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.



HANH PHAN
PRIMARY EXAMINER